

Claims

- [c1] 1.A trailer brake controller for use in a passenger vehicle for controlling a towed trailer comprising:
 - a control element positioned within the passenger vehicle;
 - a vehicle speed input providing vehicle speed to said control element;
 - a vehicle brake pressure input providing vehicle brake pressure to said control element; and
 - a trailer brake output, said trailer brake output controlled by said control element in response to said vehicle speed input and said vehicle brake pressure input.
 - [c2] 2.A trailer brake controller as described in claim 1, wherein said vehicle speed input and said vehicle brake pressure input are provided by a vehicle anti-lock braking system.
 - [c3] 3.A trailer brake controller as described in claim 1, wherein said vehicle brake pressure input is provided by a master cylinder sensor.
 - [c4] 4.A trailer brake controller as described in claim 1, further comprising:
 - a diagnostic input in communication with said control element.
 - [c5] 5.A trailer brake controller as described in claim 1, further comprising:
 - at least one trailer brake indicator lamp output.
 - [c6] 6.A trailer brake controller as described in claim 1, further comprising:
 - an anti-lock braking activation input in communication with said control element, said anti-lock braking activation input signaling said control element when a vehicle anti-lock braking system is activated.
 - [c7] 7.A trailer brake controller as described in claim 1, further comprising:
 - at least one communication element, said at least one communication element providing communication between said control element and a vehicle occupant.
 - [c8] 8.A trailer brake controller as described in claim 7, wherein said at least one communication element comprises a display.

- [c9] 9.A trailer brake controller as described in claim 7, wherein said at least one communication element comprises a display, a user control and a user override switch.

[c10] 10.A trailer brake controller as described in claim 8, wherein said display includes a gain display and a signal strength display.

[c11] 11.A trailer brake controller for use in a passenger vehicle for controlling a towed trailer comprising:
a control element positioned within the passenger vehicle and in communication with a vehicle anti-lock braking system;
a vehicle speed input providing vehicle speed from said vehicle anti-lock braking system to said control element;
a vehicle brake pressure input providing vehicle brake pressure from said anti-lock braking system to said control element; and
a trailer brake output, said trailer brake output controlled by said control element in response to said vehicle speed input and said vehicle brake pressure input.

[c12] 12.A trailer brake controller as described in claim 11, further comprising: a diagnostic input in communication with said control element.

[c13] 13. A trailer brake controller as described in claim 11, further comprising: at least one trailer brake indicator lamp output.

[c14] 14.A trailer brake controller as described in claim 11, further comprising: an anti-lock braking activation input in communication with said control element, said anti-lock braking activation input signaling said control element when a vehicle anti-lock braking system is activated.

[c15] 15.A trailer brake controller as described in claim 11, further comprising: at least one communication element, said at least one communication element providing communication between said control element and a vehicle occupant.

[c16] 16.A trailer brake controller as described in claim 15, wherein said at least one communication element comprises a display.

- [c17] 17.A trailer brake controller as described in claim 15, wherein said at least one communication element comprises a display, a user control and a user over-ride switch.
- [c18] 18.A trailer brake controller as described in claim 17 wherein said user control comprises a gain input control.
- [c19] A trailer brake controller as described in claim 16, wherein said display includes a gain display and a signal strength display.
- [c20] 20.A method of controlling a trailer braking system comprising:
determining vehicle speed and vehicle braking pressure through communication with an anti-lock braking system on the vehicle;
relaying the vehicle speed and vehicle braking pressure to a control element positioned on the vehicle;
using said vehicle speed and vehicle braking pressure to determine a trailer brake output signal; and
sending said trailer brake output signal to the trailer braking system.
- [c21] 21.A method as described in claim 20, further comprising:
sending a diagnostic signal from the trailer braking system to said control element;
informing a vehicle occupant of said diagnostic signal through the use of a communication element.
- [c22] 22.A method as described in claim 21, wherein said communication element comprises a display mounted within the vehicle dash.